5   CLAIMS

What is claimed is:

1.   A method of automatically controlling the exposure time of an image sensor, said

10   image sensor including a matrix of pixels, said method comprising:

        determining a value NW as the number of pixels in said matrix that output a pixel signal

greater than a value VHIGH;

        determining a value NB as the number of pixels in said matrix that output a pixel signal

less than a value VLOW;

15   determining a value NVW as the number of pixels in said matrix that output a pixel

signal greater than a value VSHIGH;

        determining a value NVB as the number of pixels in said matrix that output a pixel signal

less than a value VSLOW;

        determining if NW is greater than a first predetermined high threshold KW, and if so:

                determining if NVW is greater than a second predetermined high threshold KVW,

20   and if so, decreasing said exposure time by a first decrease percentage P1, but if not, decreasing

said exposure time by a second decrease percentage P2; and

        determining if NB is greater than a first predetermined low threshold KB, and if so:

                determining if NVB is greater than a second predetermined low threshold KVB,

25   and if so, increasing said exposure time by a first increase percentage P3, but if not, increasing

said exposure time by a second increase percentage P4.

2.   The method of Claim 1 wherein VSLOW is less than VLOW and further wherein

VSHIGH is greater than VHIGH.

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3.   The method of Claim 1 wherein said first decrease percentage P1 is greater than said second decrease percentage P2.

4.   The method of Claim 3 wherein P1 is about 50 percent and P2 is about 6 percent.

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5.   The method of Claim 1 wherein said first increase percentage P3 is greater than said second increase percentage P4.

6.   The method of Claim 5 wherein P3 is about 100 percent and P4 is about 6 percent.

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7.   The method of Claim 1 wherein said predetermined values of KB and KW are about 75% and 25% of the total number of pixels in said matrix.

20   8.   A method of automatically controlling the amplification gain of an image sensor, said image sensor including a matrix of pixels, said method comprising:

determining a value NW as the number of pixels in said matrix that output a pixel signal greater than a value VHIGH;

determining a value NB as the number of pixels in said matrix that output a pixel signal

25   less than a value VLOW;

determining a value NVW as the number of pixels in said matrix that output a pixel signal greater than a value VSHIGH;

5   determining a value NVB as the number of pixels in said matrix that output a pixel signal less than a value VSLOW;

determining if NW is greater than a first predetermined high threshold KW, and if so:

determining if NVW is greater than a second predetermined high threshold KVW, and if so, decreasing said amplification gain by a first decrease percentage P1, but if not,

10   decreasing said amplification gain by a second decrease percentage P2; and

determining if NB is greater than a first predetermined low threshold KB, and if so:

determining if NVB is greater than a second predetermined low threshold KVB, and if so, increasing said amplification gain by a first increase percentage P3, but if not, increasing said amplification gain by a second increase percentage P4.

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9.   The method of Claim 8 wherein VSLOW is less than VLOW and further wherein VSHIGH is greater than VHIGH.

10.   The method of Claim 8 wherein said first decrease percentage P1 is greater than

20   said second decrease percentage P2.

11.   The method of Claim 10 wherein P1 is about 50 percent and P2 is about 6 percent.

25   12.   The method of Claim 8 wherein said first increase percentage P3 is greater than said second increase percentage P4.

5   13.   The method of Claim 12 wherein P3 is about 100 percent and P4 is about 6 percent.

        14.   The method of Claim 8 wherein said predetermined values of KB and KW are about 75% and 25% of the total number of pixels in said matrix.